

AMENDMENT UNDER 37 C.F.R. § 1.111

Application No.: 09/987,639

Atty Docket No.: Q67304

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

Claim 1. (currently amended): A light-emitting device comprising:
a pair of electrodes formed on a substrate; and
organic compound layers provided in between the electrodes,
wherein the organic compound layers ~~comprise~~comprises a light-emitting layer
comprising a hole-transporting material and a phosphorescent compound and an electron-
transporting layer comprising an electron-transporting material, and an ionization potential of the
electron-transporting material is 5.9 eV or more.

Claim 2. (original): The light-emitting device according to claim 1, wherein a
minimum excitation triplet energy level of the electron-transporting material is from 60 kcal/mol
to 90 kcal/mol.

Claim 3. (original): The light-emitting device according to claim 1, wherein an
electron mobility of the electron-transporting material is $1 \times 10^{-4} \text{ cm}^2 \cdot \text{V}^{-1} \cdot \text{s}^{-1}$ or more in an
electric field of $1 \times 10^5 \text{ V} \cdot \text{cm}^{-1}$.

Claim 4. (original): The light-emitting device according to claim 1, wherein the
electron-transporting material is an aromatic heterocyclic compound comprising a hetero atom.

Claim 5. (currently amended): The light-emitting device according to claim 1,
wherein the electron-transporting material is an aromatic heterocyclic compound which has an
azole ~~skeleton~~skeleton.

AMENDMENT UNDER 37 C.F.R. § 1.111

Application No.: 09/987,639

Atty Docket No.: Q67304

Claim 6 (currently amended): The light-emitting device according to claim 1, wherein the electron-transporting material is at least one of an aromatic heterocyclic compound which has a condensed azole ~~skeleton~~skeleton and an aromatic heterocyclic compound which has a triazine ~~skeleton~~skeleton.

Claim 7. (original): The light-emitting device according to claim 1, wherein the electron-transporting material is an aromatic heterocyclic compound which has an condensed imidazopyridine.

Claim 8. (original): The light-emitting device according to claim 1, wherein the content of the electron-transporting material is from 20 to 100% by weight based on the total content of the electron-transporting layer.

Claim 9. (original): The light-emitting device according to claim 1, wherein at least one of the organic compound layers is formed by a coating method.

Claim 10. (original): The light-emitting device according to claim 1, wherein the phosphorescent compound comprises one of orthometallated metal complex and porphyrin metal complex.

Claim 11. (original): The light-emitting device according to claim 10, wherein the orthometallated metal complex comprises one of rhodium, platinum, gold, iridium, ruthenium and palladium.

Claim 12. (original): The light-emitting device according to claim 1, wherein the content of the phosphorescent compound is from 0.1 to 70% by weight based on the total content of the light-emitting layer.

AMENDMENT UNDER 37 C.F.R. § 1.111

Application No.: 09/987,639

Atty Docket No.: Q67304

Claim 13. (currently amended): A light-emitting device comprising:
a pair of electrodes formed on a substrate; and
organic compound layers provided in between the electrodes,
wherein the organic compound layers ~~comprise~~comprises a hole-transporting layer
comprising a hole-transporting material, a light-emitting layer comprising a phosphorescent
compound and an electron-transporting layer comprising an electron-transporting material, and
an ionization potential of the electron-transporting material is 5.9 eV or more.

Claim 14. (original) The light-emitting device according to claim 13, wherein a
minimum excitation triplet energy level of the electron-transporting material is from 60 kcal/mol
to 90 kcal/mol.

Claim 15. (original): The light-emitting device according to claim 13, wherein an
electron mobility of the electron-transporting material is $1 \times 10^{-4} \text{ cm}^2 \cdot \text{V}^{-1} \cdot \text{s}^{-1}$ or more in an
electric field of $1 \times 10^5 \text{ V} \cdot \text{cm}^{-1}$.

Claim 16. (original): The light-emitting device according to claim 13, wherein the
electron-transporting material is an aromatic heterocyclic compound comprising a hetero atom.

Claim 17. (currently amended): The light-emitting device according to claim 13,
wherein the electron-transporting material is an aromatic heterocyclic compound which has an
azole ~~skeleton~~skeleton.

Claim 18. (currently amended): The light-emitting device according to claim 13,
wherein the electron-transporting material is at least one of an aromatic heterocyclic compound

AMENDMENT UNDER 37 C.F.R. § 1.111

Application No.: 09/987,639

Atty Docket No.: Q67304

which has a condensed azole ~~skeleton~~skeleton and an aromatic heterocyclic compound which has a triazine ~~skeleton~~skeleton.

Claim 19. (original): The light-emitting device according to claim 13, wherein the electron-transporting material is an aromatic heterocyclic compound which has an condensed imidazopyridine.

Claim 20. (original): The light-emitting device according to claim 13, wherein the content of the electron-transporting material is from 20 to 100% by weight based on the total content of the electron-transporting layer.

Claim 21. (original): The light-emitting device according to claim 13, wherein at least one of the organic compound layers is formed by a coating method.

Claim 22. (original): The light-emitting device according to claim 13, wherein the phosphorescent compound comprises one of orthometallated metal complex and porphyrin metal complex.

Claim 23. (original): The light-emitting device according to claim 22, wherein the orthometallated metal complex comprises one of rhodium, platinum, gold, iridium, ruthenium and palladium.

Claim 24. (original): The light-emitting device according to claim 13, wherein the content of the phosphorescent compound is from 0.1 to 70% by weight based on the total content of the light-emitting layer.

Claim 25. (new): A light-emitting device comprising:
a pair of electrodes formed on a substrate; and

AMENDMENT UNDER 37 C.F.R. § 1.111

Application No.: 09/987,639

Atty Docket No.: Q67304

organic compound layers provided in between the electrodes,
wherein the organic compound layers comprise a light-emitting layer comprising a hole-transporting material and a phosphorescent compound and an electron-transporting layer comprising an electron-transporting material, and an ionization potential of the electron-transporting material is 5.9 eV or more, and

wherein a minimum excitation triplet energy level of the electron-transporting material is from 60 kcal/mol to 90 kcal/mol, an electron mobility of the electron-transporting material is $1 \times 10^{-4} \text{ cm}^2 \cdot \text{V}^{-1} \cdot \text{s}^{-1}$ or more in an electric field of $1 \times 10^5 \text{ V} \cdot \text{cm}^{-1}$ and the electron-transporting material is an aromatic heterocyclic compound comprising a hetero atom.

Claim 26. (new): A light-emitting device comprising:

a pair of electrodes formed on a substrate; and

organic compound layers provided in between the electrodes,

wherein the organic compound layers comprise a hole-transporting layer comprising a hole-transporting material, a light-emitting layer comprising a phosphorescent compound and an electron-transporting layer comprising an electron-transporting material, and an ionization potential of the electron-transporting material is 5.9 eV or more, and

wherein a minimum excitation triplet energy level of the electron-transporting material is from 60 kcal/mol to 90 kcal/mol, and wherein an electron mobility of the electron-transporting material is $1 \times 10^{-4} \text{ cm}^2 \cdot \text{V}^{-1} \cdot \text{s}^{-1}$ or more in an electric field of $1 \times 10^5 \text{ V} \cdot \text{cm}^{-1}$ and the electron-transporting material is an aromatic heterocyclic compound comprising a hetero atom.